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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,116	11/25/2003	Atsushi Koide	AK-N-432XX	4859
207 7590 06/18/2007 WEINGARTEN, SCHURGIN, GAGNEBIN & LEOVICI LLP TEN POST OFFICE SQUARE BOSTON, MA 02109			EXAMINER AHMED, SHEEBA	
			ART UNIT 1773	PAPER NUMBER
			MAIL DATE 06/18/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/722,116	<b>Applicant(s)</b> KOIDE ET AL.	
	<b>Examiner</b> Sheeba Ahmed	<b>Art Unit</b> 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment and Arguments*

1. No amendments have been made to the claims in the response submitted on April 2, 2007. Amendments to the Specification have been entered in the above-identified application. **Claims 1 and 2 are pending.**

Applicant's arguments, with respect to the rejection of claims 1 and 2 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement have been fully considered and are persuasive. The rejection of claims 1 and 2 under 35 U.S.C. 112, first paragraph, been withdrawn.

However, upon further consideration, a new ground of rejection is made in view of Koide et al. (US 6,874,563 B2). Any inconvenience to the Applicants is regretted.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koide et al. (US 6,874,563 B2)

Koide et al. disclose a composite comprising a carbon nano material and a resin binder wherein the resin binder and carbon nano material mixture is plasticized and injection molded to form a preliminarily molded member (Abstract). The preliminarily

molded member is injection molded by a screw type preplasticization injection machine comprising a plasticizing device for plasticizing the carbon nano material and a resin binder and a injection device for injecting the plasticized carbon nano material, the plasticizing device and the injection device being disposed separately, both the devices are communicated with each other through a flow path, and the plasticized carbon nano material is injected after metering by the injection device. After a carbon nano material, which is known as a carbon nano tube, and resin binder pellets such as those of a thermoplastic resin, are plasticized by an inline screw type injection machine, they are injected into and fill a mold for preliminarily molding to thereby mold a preliminarily molded member as shown in FIG. 1. Carbon nano tubes having a diameter of 10 nm (0.01  $\mu\text{m}$ ) and a length of 1 to 10  $\mu\text{m}$  can be used. The carbon nano material and the resin binder, which are supplied from the hopper into a heating cylinder, are plasticized (melted and kneaded) by the rotation of an injection screw, fed by pressure to the head of the injection screw and metered (stored) in the head portion of the heating cylinder when the injection screw is moved rearward by internal pressure. Then, the carbon nano material and the binder are injected into the mold for preliminarily molding by the forward movement of the injection screw and fill the mold with a plasticized material. The plasticized materials injected from the nozzle fill both the cavities and are cooled therein so that the preliminarily molded member is composed of the carbon nano material and the binder is formed (See columns 2 and 3).


Koide et al. do not teach that the ratio of the carbon nano material composited with the resin binder is less than about 15 weight % based on the composite.

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However, it would have been obvious to one having ordinary skill in the art to optimize the amount of the carbon nano material given that the amount of the carbon nano material within the composite controls the conductivity of the composited material. Furthermore, with regards to the limitation that the a resin insulating skin is obtained from molding the resin and the carbon nano material, the Examiner takes the position that such a resin insulating skin must inherently be present on the preliminarily molded member taught by Koide et al. given that the composition of the molded member and the process used to make the molded member in both Koide et al. and that of the claimed invention are identical.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (571)272-1504. The examiner can normally be reached on Monday-Friday from 8am to 2pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571)272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.



Sheeba Ahmed  
Art Unit 1773  
June 1, 2007